

National Type Evaluation Program
Certificate of Conformance
for Weighing and Measuring Devices

For:

Retail Motor Fuel Dispenser
Electronic Computing
Model: Nxx Series*
Generic Name: Gilbarco, Encore
Capacity: \$999.99 Total Sale
999.999 Total Volume
\$9.999 Maximum Unit Price

Submitted by:

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Standard Features and Options

* The specific model designations of devices covered by this Certificate are listed below and on Page 2.

Meter Models	T19976 GX	T19976 GX	LC Meter P9550/P9560 (M5)
	Standard	Super Hi	Ultra Hi
	"C +" Meter	"C +" Meter	
Minimum Flow Rate	1.5 gpm	6 gpm	12 gpm
Maximum Flow Rate	12 gpm	30 gpm	60 gpm
All units have the electronic totalizer as a standard feature.			

Back-lighted liquid crystal displays (LCD)

Battery back-up for up to 72 hours

Electronic totalizer with volume and sales up to 9 999 999.99 units

Nozzles lane-oriented and high-hose attachment

Down loadable software

Category 1 Device (see Sealing)

Stand-alone or console controlled

Options:

Lever-activated nozzle

Cash/credit

CRIND (card reader in dispenser)

TRIND (transmitter/receiver in dispenser)

Full vapor recovery

Brand lighting/Light conduit

10.4 inch "Soft Key" display

Electrical Mechanical totalizer (up to 999 999.9 units)

Key control

Preset cash and/or credit

10.4 inch LCD display

Intercom/Overhead speaker

Vapor recovery ready

10.4 inch "Touch Screen" display

Push-to-start (activates pump if nozzle is lifted)

Programmable pump preset

Cash acceptor

InfoScreen

Bar code scanner

"VaporVac"

5.7 inch "Monochrome" display

This device was evaluated under the National Type Evaluation Program (NTEP) and was found to comply with the applicable technical requirements of Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: August 31, 2000

Henry V. Oppermann
Chief, Office of Weights and Measures
Issue Date: September 27, 2000

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Retail Motor Fuel Dispenser
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Application: For use in dispensing gasoline and diesel motor fuel at retail service stations, attended or unattended, with approved and compatible equipment. These dispensers are approved for use with Phase II vapor recovery equipment and approved bootless nozzles when the system and components are certified and comply with the zero-set-back interlock requirements.

Model Designation: The specific characters in the model designation are represented below:

Position 1	Position 2 & 3	Hydraulics Description	Grade / Hose	Not Part of Model Code
N = Encore	A0	Dispenser	1 Grade	A = Multi-House
	A1	Dispenser	2 Grade	
	A2	Dispenser	3 Grade	
	A3	Dispenser	4 Grade	
	C0	Pump	1 Grade	C = Multi-Pump
	C1	Pump	2 Grade	
	C2	Pump	3 Grade	
	C3	Pump	4 Grade	
	G0	Dispenser Single Hose	3 Grade	G = Single Hose
	G1	Dispenser Single Hose + 1	3 + 1 Grade	
	G2	Pump Single Hose	3 Grade	
	G3	Pump Single Hose + 1	3 + 1 Grade	
	J0	Blender Dispenser	3 Grade	J = Multi-Hose Blender
	J1	Blender Pump	3 Grade	
	J2	Blender + 1 Dispenser	4 Grade	
	J3	Blender + 1 Pump	4 Grade	
	L0	Blender Dispenser X + 1	2 + 1 Grade	L = X + 1 Blender
	L1	Blender Dispenser X + 1	3 + 1 Grade	
	L2	Blender Dispenser X + 1	4 + 1 Grade	
	L3	Blender Disp. X + 1	5 + 1 Grade	
	L4	Blender Pump X + 1	2 + 1 Grade	
	L5	Blender Pump X + 1	3 + 1 Grade	
	L6	Blender Pump X + 1	4 + 1 Grade	
	L7	Blender Pump X + 1	5 + 1 Grade	
	N0	Blender Dispenser X + 0	2 + 0 Grade	N = X + 0 Blender
	N1	Blender Dispenser X + 0	3 + 0 Grade	
	N2	Blender Dispenser X + 0	4 + 0 Grade	
	N3	Blender Dispenser X + 0	5 + 0 Grade	
	N4	Blender Pump X + 0	2 + 0 Grade	
	N5	Blender Pump X + 0	3 + 0 Grade	
	N6	Blender Pump X + 0	4 + 0 Grade	
	N7	Blender Pump X + 0	5 + 0 Grade	
	P0	Super-Hi Dispenser	1 Grade	P = High Flow
	P1	Super-Hi Master	1 Grade	
	P2	Super-Hi Combo	1 Grade	
	P3	Ultra-Hi Master	1 Grade	
	P4	Ultra-Hi Combo	1 Grade	
	P5	Ultra-Hi Satellite	1 Grade	
	R0	No Hydraulics		R = Specials
	R1	Robot		
	R2	Simulator		
	R3	Pumpless pump		
	R4	No Electronics		

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Identification: The identification badge, metal or a self-destructive badge, is on the lower base plate below the access panel covering the hydraulics cabinet. Optional features are indicated on the identification plate.

Sealing: The Encore Series device has no remote configuration capability and is classified as a Category 1 device. Access to all metrological features and functions are controlled through the use of a sealable security switch. The security switch has two positions, “normal/sealed” and “calibration/configuration.” When the security switch is in the “calibration/configuration” position, sealable parameters including meter calibration, gallon/liter settings, and blend ratio settings can be accessed. Access to sealable parameters is prevented by placing the security switch in the “normal/sealed” position and threading a wire security seal through the hinged cover which fits over the security switch. The wire security seal must be broken in order to lift the hinged cover and to move the security switch to the “calibration/configuration” position.

Electronic calibration (E-cal): Access to the electronic calibration feature is through the security switch described above. With the switch in the “calibration/configuration” position, a calibration code and the volume of the volumetric standard are entered into the keypad next to the security switch. Product is then dispensed into the standard, a delivery error is determined in cubic inches, and the error value is entered into the keypad. The security switch is then returned to the normal operating (“normal/sealed”) position and the switch cover is sealed with a wire security seal.

Gallon/Liter setting: Access to the gallon/liter setting is through the security switch described above. With the switch in the “calibration/configuration” position, a conversion factor is used to program all Encore® Series dispensers to indicate in gallons or liters. Gallon/Liter setting information can also be viewed without entering the configuration mode. With the switch in the “normal/sealed” position, the number of times that the conversion factor has been changed since the initial installation can be displayed in the main “Volume” display by pressing “ENTER” on the manager’s keypad. Press any other key to revert to the normal display. See “examples” shown below.

Blend ratio setting: Access to the blend ratio setting is through the security switch described above. On customer-selectable and fixed-blenders, the individual blend ratios for each grade may be programmed at the dispenser. Blend ratio information can also be viewed without entering the configuration mode. With the switch in the “normal/sealed” position pressing “ENTER” on the manager’s keypad causes the display at the dispenser to indicate the number of times the blend ratio has been changed as shown below.

EXAMPLES:

The **ENTER** key is used to display blender information on a unit that is configured for blends. If the unit is not a blender then no action is taken when the **ENTER** key is depressed. The **CLEAR** key is used to exit blend info mode. The unit will also exit blend info mode after 1 minute has elapsed.

Blend information is displayed in the following format:

Sale Display: XXXX - Number of times blend ratios have been adjusted. Example - 0018 would indicate that the blend ratios have been changed 18 times.

Volume Display: XXXX - Number of times volume units have been adjusted. Example - 0019 would indicate that the volume unit has been changed from liters to gallons and gallons to liters a total of 19 times.

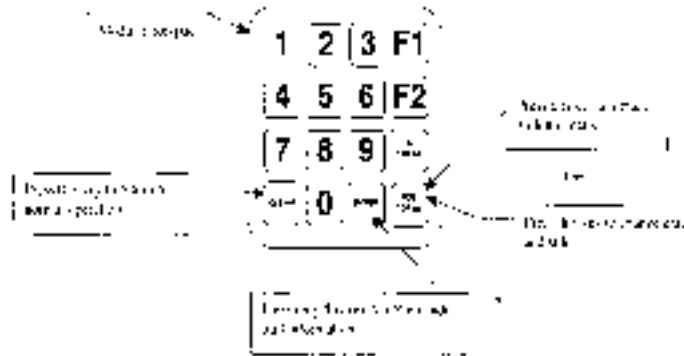
PPU Grade Display: XXX - Each PPU Grade will display the percentage of the lowest octane pure product portion of the blend. Example: A three-grade blender could show this: PPU 1 100, PPU 2 83, PPU 3 75. This would indicate that grade one was composed of 100% of the low octane pure product, grade two was composed of 83% of the low octane pure product, and grade three was composed of 75% of the low octane pure product.

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Operation: The vacuum-assist vapor recovery option for the Encore® Series consists of an explosion-proof motor driving a vacuum pump. The motor(s)/pump(s) are in the hydraulic section of the dispenser. The PC board for the electronic vacuum pump-controller is in the electronic section of the dispenser. The PC board monitors the rate at which gasoline is dispensed and then proportionally controls the motor(s)/pump(s) speeds. The rate of vapor recovery is proportional to the product flow rate. Each hose is equipped with an electronically-operated vapor valve, which operates without isolating hoses.

Dispensers equipped with the "TRIND" (transmitter/receiver in the dispenser) are authorized by radio frequency communication. The transponder tag, mounted in the vehicle or hand-held unit, communicates to the receiver in the dispenser of the customer's predetermined preferences. The transponder may be overridden by using a credit card or the transaction canceled by pressing the "CANCEL" button. Transponders are not capable of concurrent use at multiple fueling positions or consecutive use at the same dispenser.

For units with electronic totalizers (effective April 1, 1998), you can retrieve totals electronically at the pump or dispenser by using the modular keypad. This keypad sits behind the locked access door on the "A" side of the electronics module. For the Encore® Series, it mounts on a removable magnetic pad that attaches to the inside cabinet behind the left or right option door.

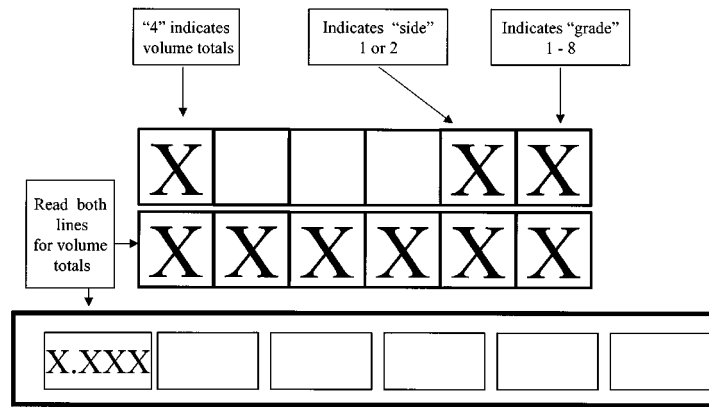


The **VOL TOTAL** key is used to retrieve volume totals for each fuel grade. These key functions do not require a security code to access. Just press the **VOL TOTAL** button. The **CLEAR** key is used to exit volume total or audit trail modes.

Retrieving VOL TOTAL Examples:

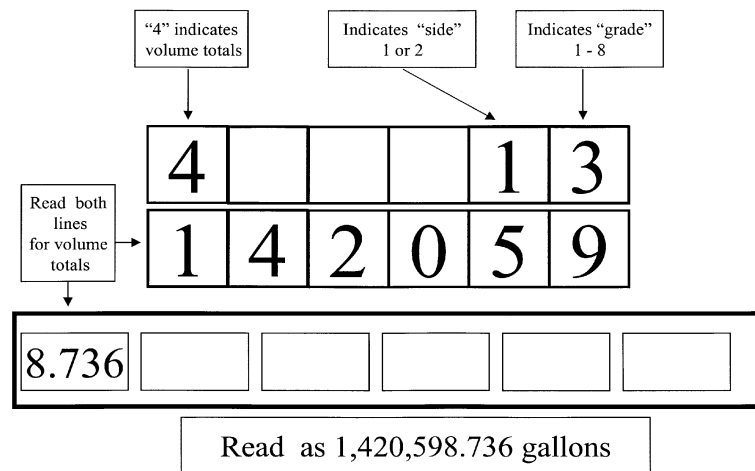
Press **VOL TOTAL** - display changes from normal to volume totals
Press **Enter** to change the flashing display location to the first digit
Press **1** for side one or **2** for side two
Press **Enter** - flashing display moves to the second digit
Press 1 or 2 or 3 or 4 or 5 or 6, etc., for grades
Read electronic totalizer for each side and grade
Press **Clear** to return to normal mode

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The sample below shows a volume total of **1 420 598.736** gallons on side 1, product 3.

Electronic totalizer can display up to 9 999 999.999 units (gallons or liters).



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Test Conditions: This Certificate supersedes Certificate of Conformance Number 00-035 and is issued to correct the method of sealing used in the device, to reflect the elimination of the event logger capability from the device, and to include additional information in the original test conditions. This Certificate is issued based upon information provided by the manufacturer, the previous evaluation, and an evaluation of the sealable features on a recently-installed unit.

An Encore Series dispenser was installed in a field site interfaced with a console for the purposes of this evaluation. The emphasis of the evaluation was on the method of accessing the sealable features on the device and the security provided to control access to the features. A summary of the changes to the Certificate as a result of the current evaluation are outlined below followed by the previous test conditions.

The original Certificate incorrectly stated that the blend ratios can be configured at the device or remotely through the console. All sealable features, including the blend feature, are accessed only through a physical switch at the device which is protected by a physical security seal. Because its sealable features cannot be accessed remotely, the device is categorized as a "Category 1" device. Access to these features is protected by a physical seal as described under "Sealing." The operation of the physical switch to access sealable parameters and the method of sealing that switch was evaluated in the original evaluation of the device. Additionally, the current operation of accessing and securing the sealable parameters was verified as described in the evaluation above.

The original Certificate listed an "event logger" as a feature for providing information concerning changes to sealable parameters. An event logger is required for devices with unlimited remote access, that is, for "Category 3" devices. While the device originally evaluated included an event logger similar to that required in Category 3 devices, the device did not have unlimited remote access and an event logger was not required; the manufacturer chose to provide the event logger only as supplemental information. The manufacturer has now chosen to eliminate the event logger feature from the device. As a Category 1 device, the device does not have unlimited access to sealable parameters, and an event logger is not required. The deletion of this feature was confirmed during the evaluation described above, and the Certificate has been modified accordingly.

Certificate of Conformance Number 00-035: The emphasis of the evaluation of this device, generically known as the Encore Series, was on the operation and performance of the device. A unit was evaluated at the manufacturer's facility where more than 1,000,000 gallons of product were run through the device. Additionally, a unit was installed in a field installation where it was evaluated initially and again after 20 days to evaluate the operation of the electronics. Tests were conducted at both the field sites and laboratory for all options listed on page 1 of this Certificate. Additionally, the options listed on page 1 are identical to those evaluated in conjunction with Certificate of Conformance Number 90-115A9 for the Marconi (formerly Gilbarco) Advantage Series.

The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements of NIST Handbook 44.

Type Evaluation Criteria Used: NIST Handbook 44, 2000 Edition

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